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NTU researchers develop method to extract protein from beer leftovers



By Jewel Stolarchuk

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SINGAPORE: Researchers from Nanyang Technological University's (NTU) Food Science and Technology programme have developed a groundbreaking method that efficiently extracts over 80 per cent of the available protein in brewers' spent grain (BSG), a common byproduct of beer brewing.

BSG, the solid residue left behind after malted barley is brewed into beer, accounts for a whopping 85 per cent of the total waste generated by the brewing industry worldwide.

Annually, approximately 36.4 million tons of BSG are produced, often ending up in landfills or being incinerated, thus exacerbating greenhouse gas emissions.

The innovative method developed by the NTU researchers not only addresses this pressing environmental issue but also unlocks the potential of BSG proteins for various applications.

According to the researchers, these proteins are not only safe for human consumption but also of exceptional quality, rendering them suitable for direct use in supplements and as a means to augment the protein content of plant-based foods.

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The extraction process also holds promise in significantly reducing waste and carbon emissions associated with BSG disposal. By harnessing a substantial portion of the protein content from this abundant byproduct, the method presents a sustainable solution that aligns with global efforts to combat climate change and promote circular economy practices.

The proteins extracted through this method exhibit a remarkable richness in antioxidants, as highlighted by the researchers. These antioxidants offer multifaceted benefits, including potential protective effects against pollutants on human skin and the ability to extend the shelf life of cosmetics such as body lotions and moisturizers.

The implications of this research extend beyond the realms of environmental sustainability and food science, offering opportunities for innovation in the cosmetics industry as well.

With its dual benefits of waste reduction and the creation of value-added products, the NTU team's breakthrough underscores the transformative potential of interdisciplinary research in addressing pressing global challenges.